

SEQUENCE LISTING

<110> Long, Li
Luqman, Mohammad
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Zaror, Isabel

<120> USE OF ANTAGONIST ANTI-CD40 ANTIBODIES
FOR TREATMENT OF AUTOIMMUNE AND INFLAMMATORY DISEASE AND ORGAN TRANSPLANT
REJECTION

<130> PP23725.002 (309941)

<140> US/10/576,943
<141> 2006-04-21

<150> 60/565,710
<151> 2004-04-27

<150> 60/525,579
<151> 2003-11-26

<150> 60/517,337
<151> 2003-11-04

<160> 12

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 720
<212> DNA
<213> Artificial Sequence

<220>
<223> Coding sequence for light chain of CHIR-12.12
human anti-CD40 antibody

<221> CDS
<222> (1)...(720)

<400> 1
atg gcg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc tct 48
Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser
1 5 10 15

gga tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctg acc 96
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr
20 25 30

gtc acc cct gga gag ccg gcc tcc atc tcc tgc agg tcc agt cag agc 144
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
35 40 45

ctc ctg tat agt aat gga tac aac tat ttg gat tgg tac ctg cag aag 192
Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys

50	55	60	
cca ggg cag tct cca cag gtc ctg atc tct ttg ggt tct aat cgg gcc Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala			240
65	70	75	80
tcc ggg gtc cct gac agg ttc agt ggc agt gga tca ggc aca gat ttt Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe			288
85	90	95	
aca ctg aaa atc agc aga gtg gag gct gag gat gtt ggg gtt tat tac Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Val Gly Val Tyr Tyr			336
100	105	110	
tgc atg caa gct cga caa act cca ttc act ttc ggc cct ggg acc aaa Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys			384
115	120	125	
gtg gat atc aga cga act gtg gct gca cca tct gtc ttc atc ttc ccg Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro			432
130	135	140	
cca tct gat gag cag ttg aaa tct gga act gcc tct gtt gtg tgc ctg Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu			480
145	150	155	160
ctg aat aac ttc tat ccc aga gag gcc aaa gta cag tgg aag gtg gat Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp			528
165	170	175	
aac gcc ctc caa tcg ggt aac tcc cag gag agt gtc aca gag cag gac Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp			576
180	185	190	
agc aag gac agc acc tac agc ctc agc agc acc ctg acg ctg agc aaa Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys			624
195	200	205	
gca gac tac gag aaa cac aaa gtc tac gcc tgc gaa gtc acc cat cag Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln			672
210	215	220	
ggc ctg agc tcg ccc gtc aca aag agc ttc aac agg gga gag tgt tag Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys *			720
225	230	235	

<210> 2
<211> 239
<212> PRT
<213> Artificial Sequence

<220>
<223> Light chain of CHIR-12.12 human anti-CD40 antibody

<400> 2

Met Ala Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Ser
 1 5 10 15
 Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Thr
 20 25 30
 Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
 35 40 45
 Leu Leu Tyr Ser Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys
 50 55 60
 Pro Gly Gln Ser Pro Gln Val Leu Ile Ser Leu Gly Ser Asn Arg Ala
 65 70 75 80
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
 85 90 95
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
 100 105 110
 Cys Met Gln Ala Arg Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys
 115 120 125
 Val Asp Ile Arg Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
 130 135 140
 Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
 145 150 155 160
 Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
 165 170 175
 Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
 180 185 190
 Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
 195 200 205
 Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
 210 215 220
 Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230 235

<210> 3
 <211> 2016
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Coding sequence for heavy chain of CHIR-12.12
 human anti-CD40 antibody (with introns)

<400> 3
 atggagtttg ggctgagctg ggttttcctt gttgctattt taagaggtgt ccagtgtcag 60
 gtgcagttgg tggagtcctgg gggaggcggtg gtccagcctg ggaggtccct gagactctcc 120
 tgtcagccct ctggattcac cttagtgcac tatggcatgc actgggtccg ccaggctcca 180
 ggcaagggggc tggagttgggt ggagttata tcataatgagg aaagtaatacg ataccatgca 240
 gactccgtga agggccgatt caccatctcc agagacaatt ccaagatcac gctgtatctg 300
 caaatgaaca gcctcagaac tgaggacacg gctgtgtatt actgtgcgcg agatgggggt 360
 atagcagcac ctgggcctga ctactggggc caggaaacct tggtcaccgt ctcctcagca 420
 agtaccaagg gccccatccgt ctccccctg gcgcccgcta gcaagagcac ctctggggc 480
 acagcggccc tgggctgcct ggtcaaggac tactccccg aaccggtgac ggtgtcgtgg 540
 aactcaggcg ccctgaccag cggcgtgcac accttcccg ctgtcctaca gtcctcagga 600
 ctctactccc tcagcagcgt ggtgaccgtg ccctccagca gcttgggcac ccagacctac 660
 atctgcaacg tgaatcacaa gcccagcaac accaaggtgg acaagagagt tggtgagagg 720
 ccagcacagg gagggagggt gtctgcttgg agccaggctc agcgctcctg cctggacgca 780
 tcccggttat gcagtcctcag tccagggcag caaggcaggc cccgtctgcc ttccacccg 840
 gaggcctctg cccgccccac tcatgctcag ggagagggtc ttctggcttt ttcccccaggc 900

tctgggcagg cacaggctag gtgcccataa cccaggccct gcacacaaag gggcaggtgc 960
tggctcaga cctgccaaga gccatatccg ggaggaccct gcccctgacc taagcccacc 1020
ccaaaggcca aactctccac tccctcagct cggacacctt ctctcctccc agattccagt 1080
aactccaat cttctctcg cagagccaa atcttgtac aaaactcaca catgccacc 1140
gtgcccaggt aagccagccc aggctcgcc ctccagctca aggccggaca ggtgccctag 1200
atgagctgc atccaggac aggccccagc cgggtgctga cacgtccacc tccatctctt 1260
cctcagcacc tgaactcctg gggggaccgt cagtcttcctt cttccccc aaacccaagg 1320
acaccctcat gatctcccg acccctgagg tcacatgcgt ggtgtggac gtgagccacg 1380
aagaccctga ggtcaagttc aactggtagc tggacggcgt ggaggtgcataatgccaaga 1440
caaagcccg gggaggacag tacaacagca cgtaccgtgt ggtcagcgtc ctcaccgtcc 1500
tgccaccagga ctggctgaat gcaaggagt acaagtgc当地 aaagccctcc 1560
cagccccat cgagaaaacc atctccaaag ccaaaggtagg gacccgtgg gtgcgagggc 1620
cacatggaca gaggccggct cggcccaccc tctgcccata gagtgaccgc tgtaccaacc 1680
tctgtcccta cagggcagcc ccgagaacca caggtgtaca ccctgcccccc atcccgagg 1740
gagatgacca agaaccaggt cagcctgacc tgccctgtca aaggcttcta tcccagcgc当地 1800
atcgccgtgg agtgggagag caatggcag ccggagaaca actacaagac cacgcctcc 1860
gtgctggact ccgacgctc ctcttcctc tatagaaggc tcaccgtgg caagagcagg 1920
tggcagcagg ggaacgtctt ctcatgctcc gtgatgc当地 aggctctgca caaccactac 1980
acgcagaaga gcctctccct gtctccgggt aaatga 2016

<210> 4
<211> 469
<212> PRT
<213> Artificial Sequence

<220>
<223> Heavy chain of CHIR-12.12 human anti-CD40 antibody

<400> 4
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly
1 5 10 15
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln
20 25 30
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45
Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60
Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
65 70 75 80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
85 90 95
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Arg Asp Gly Gly Ile Ala Ala Pro Gly Pro Asp Tyr
115 120 125
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
130 135 140
Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys Ser Thr Ser Gly Gly
145 150 155 160
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
165 170 175
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
180 185 190
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
195 200 205
Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
210 215 220

Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
 225 230 235 240
 Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
 245 250 255
 Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 260 265 270
 Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 275 280 285
 Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
 290 295 300
 Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
 305 310 315 320
 Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 325 330 335
 Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
 340 345 350
 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 355 360 365
 Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
 370 375 380
 Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 385 390 395 400
 Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 405 410 415
 Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
 420 425 430
 Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
 435 440 445
 Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 450 455 460
 Leu Ser Pro Gly Lys
 465

<210> 5
 <211> 469
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Heavy chain of variant of CHIR-12.12 human
 anti-CD40 antibody

<400> 5
 Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Arg Gly
 1 5 10 15
 Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Val Val Gln
 20 25 30
 Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
 35 40 45
 Ser Ser Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Val Ala Val Ile Ser Tyr Glu Glu Ser Asn Arg Tyr His Ala
 65 70 75 80
 Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ile
 85 90 95
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Thr Glu Asp Thr Ala Val

100	105	110													
Tyr	Tyr	Cys	Ala	Arg	Asp	Gly	Gly	Ile	Ala	Ala	Pro	Gly	Pro	Asp	Tyr
115						120						125			
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Thr	Lys	Gly
130						135					140				
Pro	Ser	Val	Phe	Pro	Leu	Ala	Pro	Ser	Ser	Lys	Ser	Thr	Ser	Gly	Gly
145						150				155				160	
Thr	Ala	Ala	Leu	Gly	Cys	Leu	Val	Lys	Asp	Tyr	Phe	Pro	Glu	Pro	Val
						165			170			175			
Thr	Val	Ser	Trp	Asn	Ser	Gly	Ala	Leu	Thr	Ser	Gly	Val	His	Thr	Phe
						180			185			190			
Pro	Ala	Val	Leu	Gln	Ser	Ser	Gly	Leu	Tyr	Ser	Leu	Ser	Ser	Val	Val
						195		200			205				
Thr	Val	Pro	Ser	Ser	Ser	Leu	Gly	Thr	Gln	Thr	Tyr	Ile	Cys	Asn	Val
						210		215			220				
Asn	His	Lys	Pro	Ser	Asn	Thr	Lys	Val	Asp	Lys	Arg	Val	Glu	Pro	Lys
						225		230		235			240		
Ser	Cys	Asp	Lys	Thr	His	Thr	Cys	Pro	Pro	Cys	Pro	Ala	Pro	Glu	Leu
						245		250			255				
Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Thr
						260		265			270				
Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val	Val	Val	Asp	Val
						275		280			285				
Ser	His	Glu	Asp	Pro	Glu	Val	Lys	Phe	Asn	Trp	Tyr	Val	Asp	Gly	Val
						290		295			300				
Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu	Gln	Tyr	Asn	Ser
						305		310		315			320		
Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His	Gln	Asp	Trp	Leu
						325		330			335				
Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys	Ala	Leu	Pro	Ala
						340		345			350				
Pro	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln	Pro	Arg	Glu	Pro
						355		360			365				
Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Arg	Glu	Glu	Met	Thr	Lys	Asn	Gln
						370		375			380				
Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro	Ser	Asp	Ile	Ala
						385		390		395			400		
Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn	Tyr	Lys	Thr	Thr
						405		410			415				
Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Lys	Leu
						420		425			430				
Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Gln	Gly	Asn	Val	Phe	Ser	Cys	Ser
						435		440			445				
Val	Met	His	Glu	Ala	Leu	His	Asn	His	Tyr	Thr	Gln	Lys	Ser	Leu	Ser
						450		455			460				
Leu	Ser	Pro	Gly	Lys											
															465

<210> 6
<211> 239
<212> PRT
<213> Artificial Sequence

<220>
<223> Light chain of CHIR-5.9 human anti-CD40 antibody

<400> 6
Met Ala Leu Leu Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro
1 5 10 15
Gly Ser Ser Gly Ala Ile Val Met Thr Gln Pro Pro Leu Ser Ser Pro
20 25 30
Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
35 40 45
Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg
50 55 60
Pro Gly Gln Pro Pro Arg Leu Leu Ile Tyr Lys Phe Phe Arg Arg Leu
65 70 75 80
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe
85 90 95
Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr
100 105 110
Cys Met Gln Val Thr Gln Phe Pro His Thr Phe Gly Gln Gly Thr Arg
115 120 125
Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
130 135 140
Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
145 150 155 160
Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
165 170 175
Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
180 185 190
Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
195 200 205
Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
210 215 220
Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230 235

<210> 7
<211> 474
<212> PRT
<213> Artificial Sequence

<220>
<223> Heavy chain of CHIR-5.9 human anti-CD40 antibody

<400> 7
Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val Leu Gln Gly
1 5 10 15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
35 40 45
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
50 55 60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
65 70 75 80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
85 90 95
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100 105 110
Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr

115	120	125
Tyr	Gly	Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
130	135	140
Ala	Ser	Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ala Ser Lys
145	150	155
Ser	Thr	Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
165	170	175
Phe	Pro	Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
180	185	190
Gly	Val	His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
195	200	205
Leu	Ser	Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
210	215	220
Tyr	Ile	Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
225	230	235
Arg	Val	Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
245	250	255
Pro	Ala	Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
260	265	270
Lys	Pro	Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
275	280	285
Val	Val	Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
290	295	300
Tyr	Val	Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
305	310	315
Glu	Gln	Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
325	330	335
His	Gln	Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
340	345	350
Lys	Ala	Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
355	360	365
Gln	Pro	Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
370	375	380
Met	Thr	Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
385	390	395
Pro	Ser	Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
405	410	415
Asn	Tyr	Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
420	425	430
Leu	Tyr	Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
435	440	445
Val	Phe	Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
450	455	460
Gln	Lys	Ser Leu Ser Leu Ser Pro Gly Lys
465	470	

<210> 8
<211> 474
<212> PRT
<213> Artificial Sequence

<220>
<223> Heavy chain of variant CHIR-5.9 human anti-CD40 antibody

<400> 8

Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Ala Val Leu Gln Gly
 1 5 10 15
 Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 20 25 30
 Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
 35 40 45
 Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
 50 55 60
 Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
 65 70 75 80
 Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
 85 90 95
 Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
 100 105 110
 Tyr Tyr Cys Ala Arg Gly Thr Ala Ala Gly Arg Asp Tyr Tyr Tyr Tyr
 115 120 125
 Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 130 135 140
 Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 145 150 155 160
 Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 165 170 175
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 180 185 190
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 195 200 205
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
 210 215 220
 Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
 225 230 235 240
 Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
 245 250 255
 Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
 260 265 270
 Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
 275 280 285
 Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
 290 295 300
 Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
 305 310 315 320
 Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
 325 330 335
 His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
 340 345 350
 Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
 355 360 365
 Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
 370 375 380
 Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
 385 390 395 400
 Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
 405 410 415
 Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
 420 425 430
 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
 435 440 445
 Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr

450	455	460	
Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys			
465	470		
<210> 9			
<211> 612			
<212> DNA			
<213> Homo sapiens			
<220>			
<221> CDS			
<222> (1)...(612)			
<221> misc_feature			
<222> (0)...(0)			
<223> Coding sequence for short isoform of human CD40			
<400> 9			
atg gtt cgt ctg cct ctg cag tgc gtc ctc tgg ggc tgc ttg ctg acc			48
Met Val Arg Leu Pro Leu Gln Cys Val Leu Trp Gly Cys Leu Leu Thr			
1	5	10	15
gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta			96
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu			
20	25	30	
ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg			144
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val			
35	40	45	
agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa			192
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu			
50	55	60	
agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac			240
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His			
65	70	75	80
aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc			288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr			
85	90	95	
tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg			336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Gly Trp His Cys Thr			
100	105	110	
agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc			384
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly			
115	120	125	
ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag			432
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu			
130	135	140	
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Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys			

145	150	155	160	
tgt cac cct tgg aca agg tcc cca gga tcg gct gag agc cct ggt ggt				528
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly				
165	170	175		
gat ccc cat cat ctt cggtat cct gtt tgc cat cct ctt ggt gct ggt				576
Asp Pro His His Leu Arg Asp Pro Val Cys His Pro Leu Gly Ala Gly				
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Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val			
35	40	45	
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu			
50	55	60	
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His			
65	70	75	80
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr			
85	90	95	
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr			
100	105	110	
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly			
115	120	125	
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu			
130	135	140	
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys			
145	150	155	160
Cys His Pro Trp Thr Arg Ser Pro Gly Ser Ala Glu Ser Pro Gly Gly			
165	170	175	
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gct gtc cat cca gaa cca ccc act gca tgc aga gaa aaa cag tac cta 96
Ala Val His Pro Glu Pro Pro Thr Ala Cys Arg Glu Lys Gln Tyr Leu
20 25 30

ata aac agt cag tgc tgt tct ttg tgc cag cca gga cag aaa ctg gtg 144
Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val
35 40 45

agt gac tgc aca gag ttc act gaa acg gaa tgc ctt cct tgc ggt gaa 192
Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu
50 55 60

agc gaa ttc cta gac acc tgg aac aga gag aca cac tgc cac cag cac 240
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His
65 70 75 80

aaa tac tgc gac ccc aac cta ggg ctt cgg gtc cag cag aag ggc acc 288
Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr
85 90 95

tca gaa aca gac acc atc tgc acc tgt gaa gaa ggc tgg cac tgt acg 336
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Gly Trp His Cys Thr
100 105 110

agt gag gcc tgt gag agc tgt gtc ctg cac cgc tca tgc tcg ccc ggc 384
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly
115 120 125

ttt ggg gtc aag cag att gct aca ggg gtt tct gat acc atc tgc gag 432
Phe Gly Val Lys Gln Ile Ala Thr Gly Val Ser Asp Thr Ile Cys Glu
130 135 140

ccc tgc cca gtc ggc ttc ttc tcc aat gtg tca tct gct ttc gaa aaa 480
Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys
145 150 155 160

tgt cac cct tgg aca agc tgt gag acc aaa gac ctg gtt gtg caa cag 528
Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln
165 170 175

gca ggc aca aac aag act gat gtt gtc tgt ggt ccc cag gat cgg ctg 576
Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu
180 185 190

aga gcc ctg gtg gtg atc ccc atc atc ttc ggg atc ctg ttt gcc atc 624
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile
195 200 205

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ctc ttg gtg ctg gtc ttt atc aaa aag gtg gcc aag aag cca acc aat	672
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn	
210 215 220	
aag gcc ccc cac ccc aag cag gaa ccc cag gag atc aat ttt ccc gac	720
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp	
225 230 235 240	
gat ctt cct ggc tcc aac act gct gct cca gtg cag gag act tta cat	768
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His	
245 250 255	
gga tgc caa ccg gtc acc cag gag gat ggc aaa gag agt cgc atc tca	816
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Val Gln Glu Arg Gln *	
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Ile Asn Ser Gln Cys Cys Ser Leu Cys Gln Pro Gly Gln Lys Leu Val	
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Ser Asp Cys Thr Glu Phe Thr Glu Thr Glu Cys Leu Pro Cys Gly Glu	
50 55 60	
Ser Glu Phe Leu Asp Thr Trp Asn Arg Glu Thr His Cys His Gln His	
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Lys Tyr Cys Asp Pro Asn Leu Gly Leu Arg Val Gln Gln Lys Gly Thr	
85 90 95	
Ser Glu Thr Asp Thr Ile Cys Thr Cys Glu Glu Gly Trp His Cys Thr	
100 105 110	
Ser Glu Ala Cys Glu Ser Cys Val Leu His Arg Ser Cys Ser Pro Gly	
115 120 125	
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Pro Cys Pro Val Gly Phe Phe Ser Asn Val Ser Ser Ala Phe Glu Lys	
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Cys His Pro Trp Thr Ser Cys Glu Thr Lys Asp Leu Val Val Gln Gln	
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Ala Gly Thr Asn Lys Thr Asp Val Val Cys Gly Pro Gln Asp Arg Leu	
180 185 190	
Arg Ala Leu Val Val Ile Pro Ile Ile Phe Gly Ile Leu Phe Ala Ile	
195 200 205	
Leu Leu Val Leu Val Phe Ile Lys Lys Val Ala Lys Lys Pro Thr Asn	
210 215 220	
Lys Ala Pro His Pro Lys Gln Glu Pro Gln Glu Ile Asn Phe Pro Asp	

225 230 235 240
Asp Leu Pro Gly Ser Asn Thr Ala Ala Pro Val Gln Glu Thr Leu His
 245 250 255
Gly Cys Gln Pro Val Thr Gln Glu Asp Gly Lys Glu Ser Arg Ile Ser
 260 265 270
Val Gln Glu Arg Gln
 275